

Avoiding Complications Associated With Preloaded Ultrathin Descemet Stripping Automated Endothelial Keratoplasty

To the Editor:

We read with interest the article by Palioura and Colby¹ regarding outcomes of Descemet stripping endothelial keratoplasty using grafts that had been prepared and preloaded into an EndoGlide Ultrathin inserter (Angiotech, Reading, PA) by an eye bank. The authors report intraoperative and postoperative complications, endothelial cell densities, best-corrected vision, and central corneal thickness after 1 year of follow-up. They present 2 intraoperative complications; in one case, the graft was folded incorrectly, and in the other, the graft was found to be wrinkled within the EndoGlide Ultrathin inserter. The purpose of our letter is to highlight the advantages of using the iGlide (Eurobio, France) for preloaded Descemet stripping automated endothelial keratoplasty (DSAEK) grafts and provide suggestions to avoid these reported complications.

We have reported on preparation of ultrathin (UT) endothelial grafts^{2,3} at the Veneto Eye Bank Foundation, Italy, and the long distance transport and delivery of grafts within an iGlide.⁴ One of the major advantages that we found using the iGlide was the design of the device. It consists of a cap/lid as an additional tool for preventing any movement of the donor tissue during shipment. We have observed that EndoGlide Ultrathin inserters do not have a cap, and this may therefore pose a risk of losing or moving the graft during long shipments with graft damage. The presence

of a cap not only allows the graft to stay inside the glide during transportation but also allows it to be stained with trypan blue, if required, and washed with phosphate-buffered saline before transplantation without any changes, as the tissue stays firmly inside the glide unless pulled out during surgery. Incorrect folding of the preloaded graft can be avoided with the iGlide.

In addition, the preloaded donor cornea lies on a thin contact lens preventing wrinkling of the thin donor layer in the iGlide. This avoids the possibility of graft wrinkling, which was reported as a second complication in this study. Because of the thickness and possibility of wrinkling, it becomes important to provide a firm base to the UT-DSAEK grafts using, for example, a contact lens. Furthermore, the size of the recipient bed and the donor disc was 8.0 mm in 32 cases and 7.5 mm in 3 cases as reported in this article. It is therefore of note that, after our previous report,⁵ we also receive requests for large donor posterior lamellar grafts (9.5 mm), and our laboratory and clinical experience shows that the iGlide also allows safe shipping and delivery of large UT-DSAEK grafts (data under consideration for publication). Although speculative, we have had anecdotal reports that storage of the tissue reduces the roughness of the stroma and may reduce adherence of the graft. For this reason, we would suggest that if stored prepared tissue is used, then venting incisions are important.

We agree with the results of Palioura and Colby that preloaded donor tissue reduces surgical time and some of the risks associated with preparation of large UT-DSAEK, in the operating room (perforation, irregular cut, surgical delay). In addition, it is possible to provide standardized and validated tissue for transplant. Hence, we believe that the iGlide may be a useful solution to avoid many unnecessary manipulations and tissue wastage, and it is also a safe device for transportation and delivery

of, both, small- and large-diameter UT-DSAEK grafts.

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